



san joaquin county & DELTA WATER QUALITY COALITION

November 16, 2017

Pamela Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon,

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) is submitting a request for the completion of management plans and Management Plan Monitoring (MPM) for specific constituents from selected site subwatersheds. Justification for the request is provided through the four requirements outlined in the Coalition's Waste Discharge Requirements (WDR R5-2014-0029-R1), Appendix MRP-1, Page 9 per each site subwatershed in the attached letter. Monitoring results for each site/constituent included in this letter are provided in Appendix I.

The four sites listed below meet the requirements for management plan completion. If approved, the Coalition will remove site specific constituent management plans and MPM for:

- Lone Tree Creek @ Jack Tone Rd (pH and water column toxicity to *P. promelas*)
- Roberts Island @ Whiskey Slough Pump (water column toxicity to *C. dubia*)
- Terminous Tract Drain @ Hwy 12 (arsenic)
- Union Island Drain @ Bonetti Rd (water column toxicity to *C. dubia*)

Respectfully,

A handwritten signature in black ink, appearing to read "Michael L. Johnson", written in a cursive style.

Michael L. Johnson
Technical Program Manager

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INTRODUCTION

Management Plan Monitoring (MPM) is conducted as part of the San Joaquin County and Delta Water Quality Coalition's (SJCDWQC or Coalition) management plan strategy to identify contaminant sources and evaluate the efficacy of management practices in improving water quality. Management plans are required as a result of a single exceedance of the Water Quality Trigger Limit (WQTL) of a Total Maximum Daily Load (TMDL) constituent (dissolved oxygen (DO), specific conductance (SC), boron, chlorpyrifos, and diazinon) or more than one exceedance in a three-year period of the WQTL for any other constituent. When a constituent becomes the focus of the SJCDWQC Management Plan, the Coalition initiates actions to address the exceedances including focused outreach and MPM during months when exceedances and/or toxicity are most likely to occur. When an exceedance of the WQTL for a management plan constituent does not occur for three or more years at a site, the Coalition may send a letter to the Regional Board petitioning to remove the constituent from the site's management plan.

With the adoption of the Coalition's Waste Discharge Requirements (WDR R5-2014-0029-R1), the frequency of monthly monitoring and the scheduling of MPM during months of past exceedances were modified as described in WDR Attachment A page 14: "The previous requirement to monitor monthly resulted in monitoring during months in which no problems would be expected and infrequent monitoring during peak periods when potential problems could occur. The third-party will be required to evaluate pesticide use patterns and peak times when pesticides from irrigated agriculture operations may cause problems in surface water. Based on that evaluation, the third-party will propose a frequency and time period to conduct monitoring that will adequately characterize surface waters receiving irrigated agricultural waste discharges." Therefore, the MPM schedules proposed/approved in the Coalition's MPU reports are based on months of peak pesticide use. Furthermore, page 9 of the WDR Appendix MRP-1 indicates: "demonstration of management plan completion must include consideration of periods of peak use and/or periods when a parameter is likely to be present." Appendix I of this letter includes tabulated results for all monitoring that has taken place within three years for the constituents and sites the Coalition is proposing management plan completion. In some cases, monitoring occurred during months of past exceedances because of high pesticide use during those months; in other cases, applications of pesticides shifted to different months and monitoring was adjusted according to the patterns in pesticide use. Therefore, this request should not be evaluated for monitoring during months of past exceedances but should instead be evaluated for approval based on the new WDR requirements outlining monitoring should occur during months of high use.

In 2007, the Coalition initiated general outreach to growers including information about management practices that could be implemented to reduce the impact of agriculture on water quality. Focused outreach began in 2008 and water quality data were collected to document improved water quality annually. The Coalition continues to provide general outreach to all members within the Coalition region. Through grower notifications and meetings, the Coalition informs members of water quality

results, management practices to eliminate water quality impairments, availability of funding for management practice implementation, results of studies of management practice efficacy, and management practice implementation and tracking activities.

Through analysis of monitoring data, the Coalition determined there is sufficient evidence to request the completion of five management plans from the four site subwatersheds listed in Table 1.

Table 1. SJCDWQC sites and constituents proposed for management plan completion.

SITE SUBWATERSHED	YEARS OF FOCUSED OUTREACH	PH*	ARSENIC	C. DUBIA TOXICITY	P. PROMELAS TOXICITY	TOTAL
Lone Tree Creek @ Jack Tone Rd	2008-2010, 2016-2018	X			X	2
Roberts Island @ Whiskey Slough Pump	2013-2015			X		1
Terminus Tract Drain @ Hwy 12	2011-2013, 2016-2018		X			1
Union Island Drain @ Bonetti Rd	2017-2019			X		1
Total		1	1	2	1	5

*Monitoring for field parameters will continue to occur on all sampling events.

This proposal to complete management plans is justified using preliminary monitoring data available through September 2017. The Coalition will include all tabulated monitoring results for the 2017 Water Year (WY) in the 2018 Annual Report.

To support the Coalition's request, tabulated monitoring results for the relevant three years of monitoring required are provided in an Excel file (Appendix I) for each site/constituent. These data document improved water quality due to successful outreach and education. The section key in Table 2 includes the requirements for management plan completion as outlined in the WDR (R5-2014-0029-R1), Appendix MRP-1, Page 9 and corresponding sections per each sites subwatershed.

Table 2. Management plan completion section key.

Requirements for Management Plan Completion: as outlined in the WDR for Growers Within the San Joaquin County and Delta Area That Are Members of A Third-Party Group (Order No. R5-2014-0029-R1)		Section Name/Location
1. Demonstration through evaluation of monitoring data that the water quality impairment is no longer occurring (i.e., 3 or more years with no exceedances during the times of the year when previous exceedances occurred ¹) or demonstrated compliance with the WDR's surface and groundwater receiving water limitations.		<ul style="list-style-type: none">• Site Subwatershed Overview and Monitoring History• Constituent Monitoring Results and Sourcing
2. Documentation of education and outreach to applicable members in the watershed where water quality impairment occurred.		<ul style="list-style-type: none">• Summary of Outreach
3. Documentation of member implementation of management practices that address the water quality exceedance.		<ul style="list-style-type: none">• Management Practices Implemented
4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment.		<ul style="list-style-type: none">• Justification to Complete Management Plans• Future Monitoring

¹ With the adoption of the WDR, the scheduling of MPM during months of past exceedances has been replaced with months of peak pesticide use. Page 9 of the WDR Appendix MRP-1 indicates demonstration of management plan completion much include consideration of periods of peak use and/or periods when a parameter is likely to be present.

SUPPORTING DOCUMENTATION FOR MANAGEMENT PLAN COMPLETION

LONE TREE CREEK @ JACK TONE RD

1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring
-

Constituents Requested to Remove from Management Plan

- pH
- Water column toxicity to *P. promelas*

Site Subwatershed Overview and Monitoring History

Lone Tree Creek @ Jack Tone Rd is a Represented site located in Zone 2. Monitoring was initiated in 2004 and MPM was initiated in 2007. Beginning in 2010, additional samples were collected for chlorpyrifos as part of a grant program through the CA Department of Pesticide Regulation (DPR). The DPR grant monitoring began in June 2010 and continued through February 2011.

Constituent Monitoring Results and Sourcing

Monitoring results used to justify management plan completion due to three years of monitoring with no exceedances are included in Appendix I for all constituents listed below.

pH

Exceedances of WQTL for pH, ranging from 6.10 to 9.14 (Appendix I), occurred in six samples collected from Lone Tree Creek @ Jack Tone Rd between March 2005 and February 2014. Since the last exceedance in February 2014, the Coalition has monitored for pH during 14 sampling events; there were no exceedances.

Water Column Toxicity to *P. promelas*

Water column toxicity to *P. promelas* occurred in two samples collected from Lone Tree Creek @ Jack Tone Rd in February 2005 and January 2008 (Appendix I). The TIE for February 2005 toxicity indicated high concentrations of ammonia in the sample. The January 2008 sample contained high levels of suspended solids and had extremely high oxygen demand. The Coalition resampled both toxic events (February 23, 2005 January 30, 2008) and toxicity was not persistent in either sample. Since the last toxicity in January 2008, the Coalition has sampled for water column toxicity to *P. promelas* during six events from January 2015 through February 2017; no toxicity occurred.

2. Documentation of education and outreach to applicable members in the watershed where water quality impairment occurred

Summary of Outreach

The Coalition conducted focused outreach in the Lone Tree Creek @ Jack Tone Rd site subwatershed from 2008 through 2011. In 2012, the Coalition conducted additional outreach with two new members, due to continued exceedances of the WQTL for chlorpyrifos. The Lone Tree Creek @ Jack Tone Rd site subwatershed was included in the 2016 Focused Outreach set which is occurring from 2016 through 2018.

3. Documentation of member implementation of management practices that address the water quality exceedance

The complete analysis of management practices implemented in the Lone Tree Creek @ Jack Tone Rd site subwatershed was reported in the SJCDWQC 2011 MPUR. All management practice information obtained during additional focused outreach in 2012 was reported in the 2013 MPUR. Results from the analyses are summarized in the section below. The Coalition also included an update on the current status of 2016 Focused Outreach at Lone Tree Creek @ Jack Tone Rd in the 2016 Annual Report.

Management practices implemented by growers do not affect pH levels in the water column. Monitoring data do not provide a clear indication of what changed the number of exceedances of the WQTLs for pH; however, water quality in the site subwatershed has improved as indicated by the number of completed management plans since focused outreach began.

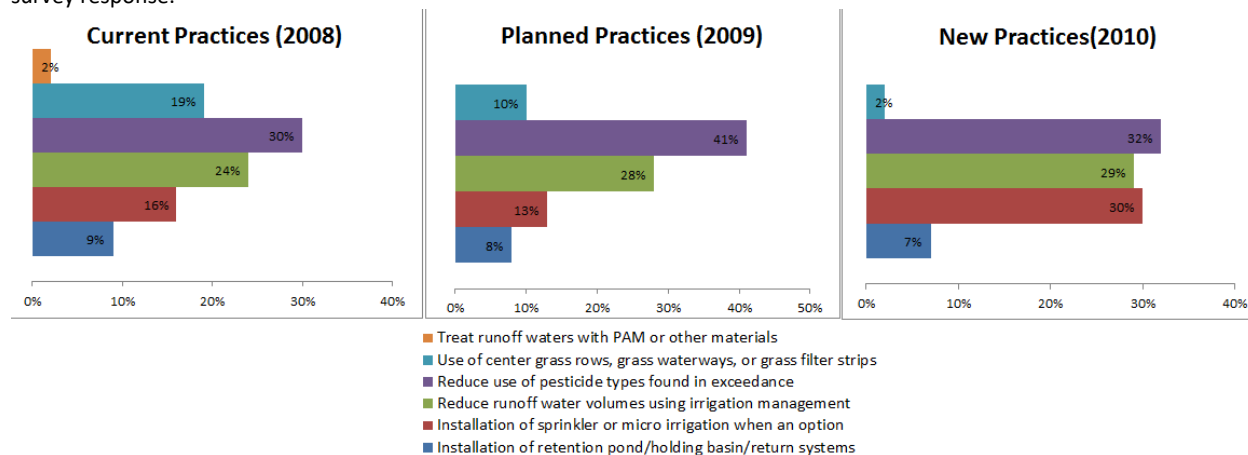
Management Practices Implemented

Focused Outreach (2008-2010)

After initial surveys were filled out, growers in the site subwatershed implemented various management practices to address runoff management and pesticide application management. Follow-up surveys indicated the three most common implemented practices were 1) reduced use of pesticides found in exceedances, 2) installation of sprinkler or micro irrigation system, and 3) use of center grass rows, grass waterways, or grass filter strips (Table 3).

Table 3. Lone Tree Creek @ Jack Tone Rd summary of management practices.

Percentage based on acreage associated with a specific practice compared to the summed acreage with all practices for each survey response.



Focused Outreach (2016-2018)

The 2016 Focused Outreach is still in progress. In 2016, the Coalition contacted two targeted growers farming 275 irrigated acres. One of the two growers indicated that they would reduce the use of the pesticides found in exceedances. The Coalition mailed a follow-up survey to determine if the grower implemented any new management practices in 2017. Results from this survey will be reported in the 2018 Annual Report.

4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

Justification to Complete Management Plans

The Coalition's focused outreach and management practice tracking strategy was effective at improving water quality in the Lone Tree Creek @ Jack Tone Rd site subwatershed as shown by no exceedances of the WQTL for pH and toxicity to *P. promelas* in three or more years. Therefore, the Coalition requests to complete the management plans for pH and toxicity to *P. promelas* in the Lone Tree Creek @ Jack Tone Rd site subwatershed.

pH

The proposal to complete the management plan for pH in the Lone Tree Creek @ Jack Tone Rd site subwatershed is justified based on monitoring data from 2014 through the 2017 WY (Table 4). Since the last exceedance in February 2014, the Coalition monitored for pH during 14 sampling events; no exceedances occurred.

Table 4. Monitoring history for pH at Lone Tree Creek @ Jack Tone Rd.

Light grey cells indicate months monitored. Dark grey cells indicate months with exceedances. Exceedance values listed bolded white.

pH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004												
2005			8.58									
2006		9.00										
2007												
2008					6.10							
2009												
2010												
2011		9.09	9.14									
2012												
2013												
2014		9.07										
2015												
2016												
2017												

Water Column Toxicity to *P. promelas*

The proposal to complete the management plan for water column toxicity to *P. promelas* in the Lone Tree Creek @ Jack Tone Rd site subwatershed is justified based on monitoring data from 2015 through the 2017 WY (Table 5). Since the last toxicity in January 2008, the Coalition monitored for toxicity to *P. promelas* during six sampling events for more than three years and no toxicity occurred.

Table 5. Monitoring history for toxicity to *P. promelas* at Lone Tree Creek @ Jack Tone Rd.

Light grey cells indicate months monitored. Dark grey cells indicate months with toxicity. Toxicity values listed bolded white.

<i>P. promelas</i>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004												
2005		0										
2006												
2007												
2008	75											
2009												
2010												
2011												
2012												
2013												
2014												
2015												
2016												
2017												

Future Monitoring

Lone Tree Creek @ Jack Tone Rd is a Represented site in Zone 2. Monitoring for the field parameter pH will continue to occur during all sampling events. Monitoring for water column toxicity to *P. promelas* will occur at the site as outlined in the 2018 WY MPU until approval of management plan completion is received from the Regional Water Board.

ROBERTS ISLAND @ WHISKEY SLOUGH PUMP

1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

Constituents Requested to Remove from Management Plan

- Water Column Toxicity to *C. dubia*

Site Subwatershed Overview and Monitoring History

Roberts Island @ Whiskey Slough Pump is one of the rotating Core sites for both Zones 4 and 6. Monitoring began on Roberts Island in the storm season of 2005 and has occurred continuously since then. Roberts Island @ Whiskey Slough Pump replaced Roberts Island Drain @ Holt Rd as the Core site for Zone 4 because Roberts Island @ Whiskey Slough Pump is more representative of drainage from the entire island (approved January 12, 2012). The Roberts Island @ Whiskey Slough Pump management plan includes constituents that were listed in both the Roberts Island @ Holt Rd and Roberts Island Drain along House Rd management plans.

Constituents Requested to Remove from Management Plan

Monitoring results used to justify management plan completion due to three years of monitoring with no exceedances are included in Appendix I for all constituents listed below.

Water Column Toxicity to *C. dubia*

The management plan for water column toxicity to *C. dubia* was transferred over from the previous Core site's management plan, Roberts Island @ Holt Rd (toxicities in 2007 and 2010). Water column toxicity to *C. dubia* occurred in a single sample collected from Roberts Island @ Whiskey Slough Pump in July 2014 (Appendix I). The TIE results for the July 2014 toxicity indicated non-polar organics were present in the sample; an exceedance of the WQTL for dichlorvos coincided with the toxicity. Since the last toxicity in July 2014, the Coalition has sampled for water column toxicity to *C. dubia* during 27 sampling events from August 2014 through July 2017; no toxicity occurred (Table 7).

2. Documentation of education and outreach to members where water quality impairment occurred

Summary of Outreach

The Coalition initiated general outreach in 2007 and has taken several actions to address water quality impairments on Roberts Island. The Coalition conducted focused outreach from 2013 through 2015 with seven targeted growers to discuss water quality impairments, review each grower's operation, and document existing management practices. The Coalition followed up with six targeted growers on the island in 2014 to assess if new practices were implemented.

3. Documentation of member implementation of management practices to address the water quality exceedance

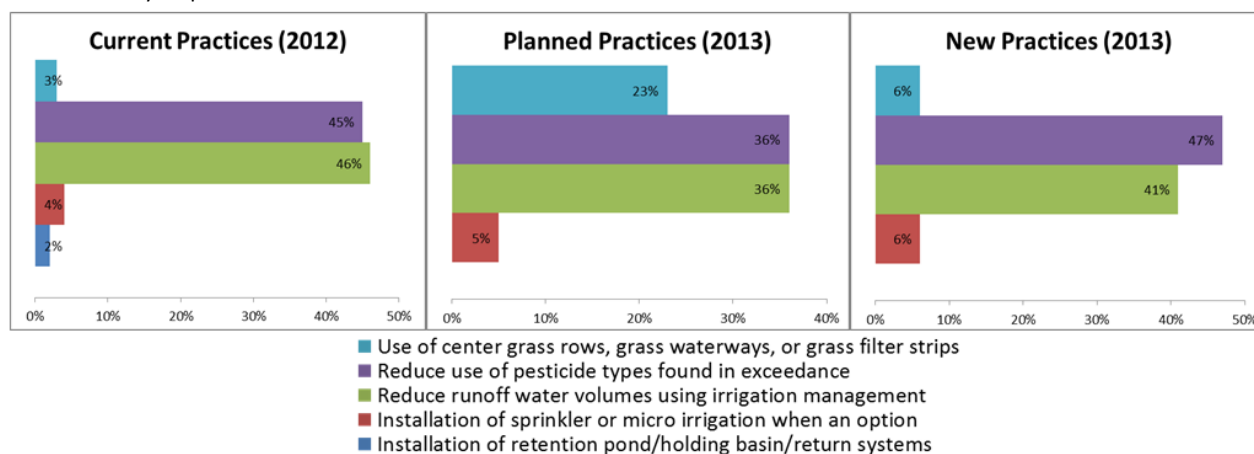
The complete analysis of management practices implemented in the Roberts Island @ Whiskey Slough Pump site subwatershed was provided in the SJCDWQC May 1, 2015 Annual Report. Results from that analysis are included in the section below.

Management Practices Implemented

After initial surveys were filled out, growers in the site subwatershed implemented various management practices to address runoff management and pesticide application management. Follow-up surveys indicated the two most commonly implemented practices were 1) reduced use of pesticides found in exceedances and 2) reduce runoff water volume using irrigation management (Table 6).

Table 6. Roberts Island @ Whiskey Slough Pump summary of management practices.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

Justification to Complete Management Plans

The Coalition's focused outreach and management practice tracking strategy was effective at improving water quality in the Roberts Island @ Whiskey Slough Pump site subwatershed as shown by no water column toxicity to *C. dubia* in three or more years. Therefore, the Coalition requests the management plan and MPM for toxicity to *C. dubia* be approved for completion at Roberts Island @ Whiskey Slough Pump.

Water Column Toxicity to *C. dubia*

The proposal to complete the management plan for water column toxicity to *C. dubia* in the Roberts Island @ Whiskey Slough Pump site subwatershed is justified based on monitoring data from 2014

through the 2017 WY. In addition, the Coalition monitored for *C. dubia* as part of Core site monitoring during months when toxicity had not previously occurred and there was no toxicity during these months. Since the last toxicity in July 2014, the Coalition monitored for toxicity to *C. dubia* during 27 sampling events; no toxicity occurred.

Table 7. Monitoring history for toxicity to *C. dubia* at Roberts Island @ Whiskey Slough Pump.

Light grey cells indicate months monitored. Dark grey cells indicate months with toxicity. Toxicity values listed bolded white.

C. dubia	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site
2006													Roberts Island Drain @ Holt Rd
2007							0						
2008													
2009													
2010			75										
2011													
2012													Roberts Island @ Whiskey Slough Pump
2013													
2014							0						
2015													
2016													
2017													

Future Monitoring

Roberts Island @ Whiskey Slough Pump is a rotating Core sites in Zone 4. During the 2018 WY, Roberts Island @ Whiskey Slough Pump will rotate to a Represented site. Monitoring for water column toxicity to *C. dubia* will occur as outlined in the 2018 WY MPU until approval of management plan completion is received by the Regional Water Board.

TERMINOUS TRACT DRAIN @ HWY 12

1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

Constituents Requested to Remove from Management Plan

- Arsenic

Site Subwatershed Overview and Monitoring History

Terminus Tract Drain @ Hwy 12 is one of the rotating Core sites located in Zone 3. Monitoring was initiated at the site in 2005 and continued through the 2017 WY.

Two additional sites within the Terminus Tract Drain subwatershed (Delta Drain-Terminus Tract off Glasscock Rd and Delta Drain-Terminus Tract off Guard Rd) were monitored during the storm and irrigation events of 2005 through 2006, beginning in February 2005 and continuing through April of 2006. The Coalition determined in 2006 that the downstream monitoring location, Terminus Tract Drain @ Hwy 12, was representative of all of the irrigation drainage on Terminus Tract; consequently, monitoring at the two upstream locations was discontinued.

Constituent Monitoring Results and Sourcing

Monitoring results used to justify management plan completion due to three years of monitoring with no exceedances are included in Appendix I for all constituents listed below.

Arsenic

Exceedances of the WQTL for arsenic, ranging from 11 mg/L to 15 mg/L (Appendix I), occurred in eight samples collected from Terminus Tract Drain @ Hwy 12 from May 2006 through March 2013. Elevated levels of arsenic in the water column are common in the Delta, as sites in the Delta, such as Terminus Tract Drain @ Hwy 12, naturally contain higher levels of arsenic in the soil. Since the last exceedance in March 2013, the Coalition has sampled for arsenic during 35 sampling events from April 2013 through August 2017; no exceedance occurred.

2. Documentation of education and outreach to applicable members in the watershed where water quality impairment occurred

Summary of Outreach

The Coalition conducted focused outreach in the Terminus Tract Drain @ Hwy 12 site subwatershed from 2011 through 2013. The Coalition contacted four growers and all four growers indicated that they intended to implement new management practices in 2011. The Coalition followed up with the targeted grower in 2012 to assess if new practices were implemented. The Terminus Tract Drain @ Hwy 12 site subwatershed was included with 2016 Focused Outreach and is in progress through 2018.

3. Documentation of member implementation of management practices that address the water quality exceedance

The complete analysis of management practices implemented in the Terminus Tract Drain @ Hwy 12 site subwatershed was reported in the SJCDWQC 2013 MPUR. Results from that analysis are summarized in the section below. The Coalition also included an update on the current status of 2016 Focused Outreach at Terminus Tract Drain @ Hwy 12 in the 2016 Annual Report.

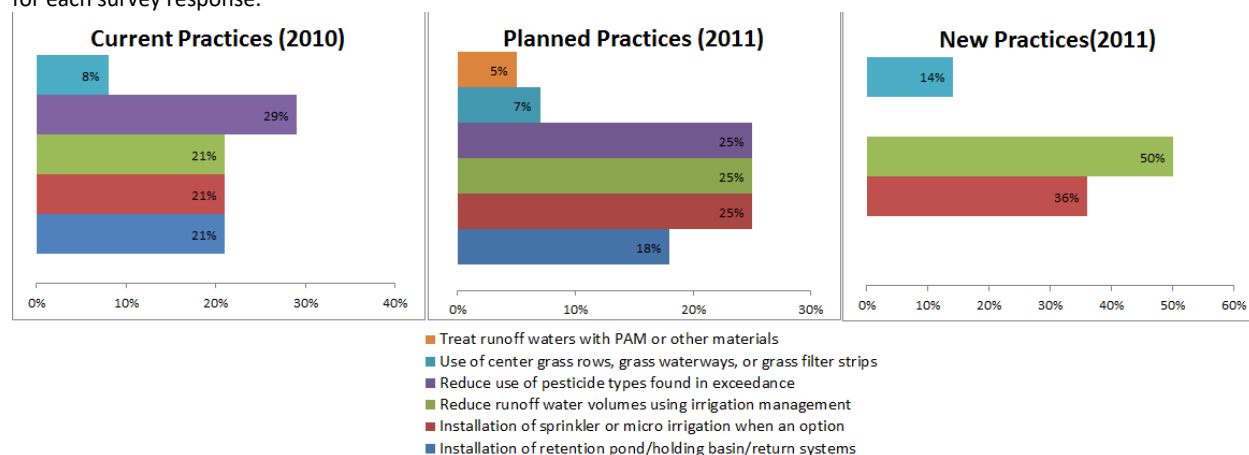
Management Practices Implemented

Focused Outreach (2011-2013)

After initial surveys were filled out, growers in the site subwatershed implemented various management practices to address runoff management and pesticide application management. Follow-up surveys indicated the two most common implemented practices after focused outreach were 1) reduced runoff water volumes using irrigation management and 2) installation of sprinkler or micro irrigation system (Table 8).

Table 8. Terminus Tract Drain @ Hwy 12 summary of management practices.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



Focused Outreach (2016-2018)

The 2016 Focused Outreach round is still in progress. In 2016, the Coalition contacted three targeted growers farming 2,468 irrigated acres. Two of three growers, accounting for 1,860 of the irrigated acres, indicated that they would reduce the use of the pesticides found in exceedances. The Coalition mailed follow-up surveys to determine if the grower implemented any new management practices in 2017. Results from the two surveys will be reported in the 2018 Annual Report.

4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

Justification to Complete Management Plans

The management practices implemented by growers were not designed to reduce transport of naturally occurring constituents like arsenic into waterbodies. However, these practices were effective at reducing the offsite movement of irrigation tailwater and sediment, and thus any offsite movement of sediment bound metals like arsenic. Monitoring results indicate that this constituent is no longer causing impairments in the Terminous Tract Drain @ Hwy 12 site subwatershed.

Arsenic

The proposal to complete the management plan for arsenic in the Terminous Tract Drain @ Hwy 12 site subwatershed is justified is based on monitoring results from 2013 through the 2017 WY (Table 9). Since the last exceedance in March 2013, the Coalition monitored for arsenic during 35 sampling events; there were no exceedances. Monitoring has occurred for more than three years with no exceedances. Therefore, the Coalition requests to complete the management plan for arsenic from the Terminous Tract Drain @ Hwy 12 site subwatershed.

Table 9. Monitoring history for arsenic at Terminous Tract Drain @ Hwy 12.

Light grey cells indicate months monitored. Dark grey cells indicate months with exceedances. Exceedance values listed bolded white.

Arsenic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006					11							
2007		11										
2008	11								11			
2009												
2010				11					11			
2011												
2012												
2013			15									
2014												
2015												
2016												
2017												

Future Monitoring

Terminous Tract Drain @ Hwy 12 is a rotating Core site in Zone 1. In the 2018 WY, Terminous Tract Drain @ Hwy 12 is a Represented site. Monitoring for arsenic will occur as outlined in the 2018 WY MPU until the Coalition receives approval to complete the management plan.

UNION ISLAND DRAIN @ BONETTI RD

1. Demonstration through evaluation of monitoring data that water quality impairment is no longer occurring

Constituents Requested to Remove from Management Plan

- Water Column Toxicity to *C. dubia*

Site Subwatershed Overview and Monitoring History

Union Island Drain @ Bonetti Rd is one of the rotating Core sites in Zone 7. Monitoring at Union Island Drain @ Bonetti Rd replaced Grant Line Canal @ Clifton Court Rd and Grant Line Canal near Calpack Rd monitoring in the 2015 WY because the site is more representative of drainage from the entire island. Management plans from the two Grant Line Canal sites were transferred to the Union Island Drain @ Bonetti Rd management plan.

Constituents Requested to Remove from Management Plan

Monitoring results used to justify management plan completion due to three years of monitoring with no exceedances are included in Appendix I for all constituents listed below.

Water Column Toxicity to *C. dubia*

The management plan for water column toxicity to *C. dubia* was transferred over from the previous monitoring site, Grant Line Canal near Calpack Rd. Since monitoring began at Union Island Drain @ Bonetti Rd in the 2015 WY, the Coalition has sampled for water column toxicity to *C. dubia* during 30 sampling events from October 2014 through August 2017; no toxicity occurred (Appendix I).

2. Documentation of education and outreach to members where water quality impairment occurred

Summary of Outreach

The Coalition initiated general outreach in 2007 for the Grant Line Canal sites, and has taken several actions to address water quality impairments on Union Island. The Coalition conducted focused outreach to growers in both Grant Line Canal site subwatersheds from 2010 through 2012. The Coalition plans initiated focused outreach to growers in the Union Island Drain @ Bonetti Rd site subwatershed during 2017 Focused Outreach (2017-2019).

3. Documentation of member implementation of management practices to address the water quality exceedance

The Coalition conducted focused outreach in the Grant Line Canal site subwatersheds from 2010 through 2012. The complete analysis of management practices implemented in the site subwatershed

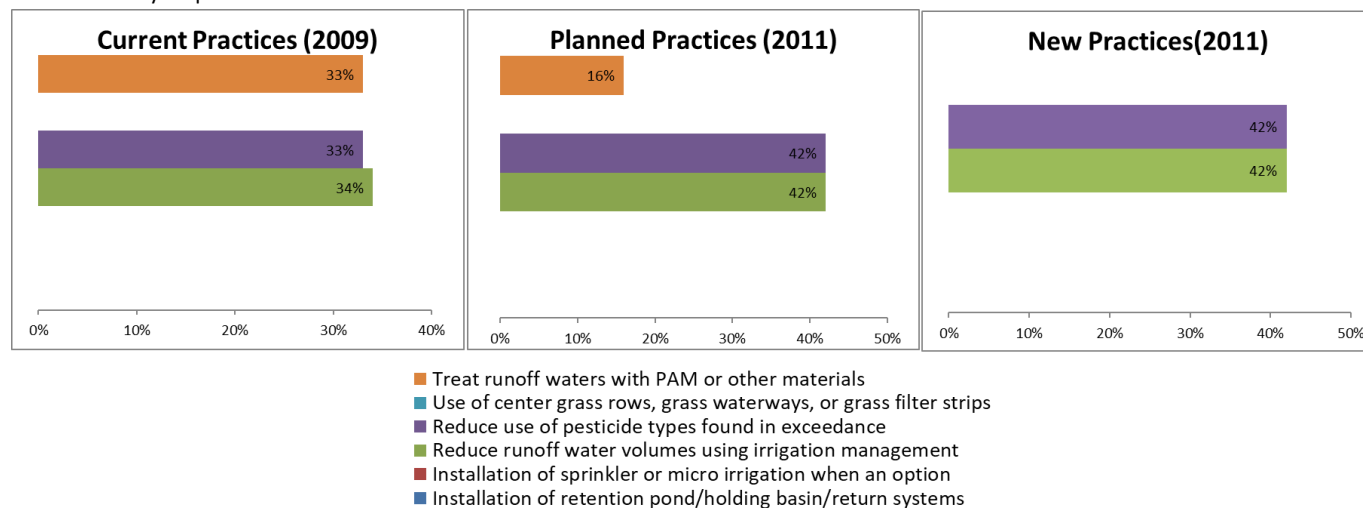
was provided in the 2011 MPUR. Results from that analysis are included in the section below. The Coalition is currently conducting focused outreach in the Union Island Drain @ Bonetti Rd site subwatershed during 2017 Focused Outreach (2017-2019), in which growers have been informed of water quality issues and management practices to help reduce impairments.

Management Practices Implemented

The following management practice information is from focused outreach in the Grant Line Canal site subwatersheds, which are located on Union Island. After initial surveys were filled out, growers in the site subwatershed implemented various management practices to address runoff management and pesticide application management. Follow-up surveys indicated the two most commonly implemented practices after focused outreach were 1) reduced use of pesticides found in exceedances and 2) reduce runoff water volume using irrigation management (Table 6).

Table 10. Grant Line Canal Sites summary of management practices.

Percentage based on acreage associated with a specific practice compared to the summed acreage associated with all practices for each survey response.



4. Demonstration that the management practices implemented by members are effective in addressing the water quality impairment

Justification to Complete Management Plans

The Coalition's focused outreach and management practice tracking strategy was effective at improving water quality in the Grant Line Canal and Union Island Drain @ Bonetti Rd site subwatersheds as indicated by no water column toxicity to *C. dubia* in three or more years.

Water Column Toxicity to *C. dubia*

The proposal to complete the management plan for water column toxicity to *C. dubia* in the Union Island Drain @ Bonetti Rd site subwatershed is justified based on monitoring data from October 2014

through the 2017 WY (Table 11). The Coalition monitored for toxicity to *C. dubia* during 30 sampling events and no toxicity occurred.

Table 11. Monitoring history for toxicity to *C. dubia* at Union Island Drain @ Bonetti Rd.

Light grey cells indicate months monitored. Dark grey cells indicate months with toxicity. Toxicity values listed bolded white.

C. dubia	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Site
2005													Grant Line Canal @ Clifton Court Rd
2006													
2007													
2008	0												
2005			79					5					Grant Line Canal near Calpack Rd
2006					10.5								
2007													
2008													
2009													
2010													
2011													
2012								60					
2013													
2014													
2014													Union Island Drain @ Bonetti Rd
2015													
2016													
2017													

Future Monitoring

Union Island Drain @ Bonetti Rd is a rotating Core site in Zone 7. During the 2018 WY, Union Island Drain @ Bonetti Rd is a Core site. Monitoring for water column toxicity to *C. dubia* will occur as outlined in the 2018 WY MPU until approval of management plan completion is received by the Regional Water Board.